

The Hope Project, 1A Camden High Street,  
London NW1

Basement Impact Assessment  
Audit

For  
London Borough of Camden

Project Number: 12466-42

Revision: D1

February 2017

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## 1.0 NON-TECHNICAL SUMMARY

- 1.1. CampbellReith was instructed by London Borough of Camden, (LBC) to carry out an audit on the Basement Impact Assessment submitted as part of the Planning Submission documentation for The Hope Project, London, NW1 (planning reference 2016/6959/P). The basement is considered to fall within Category C as defined by the Terms of Reference.
- 1.2. The Audit reviewed the Basement Impact Assessment for potential impact on land stability and local ground and surface water conditions arising from basement development in accordance with LBC's policies and technical procedures.
- 1.3. CampbellReith was able to access LBC's Planning Portal and gain access to the latest revision of submitted documentation and reviewed it against an agreed audit check list.
- 1.4. The proposed development site is currently occupied by Koko nightclub, the Hope and Anchor pub and adjacent buildings. The proposal involves the retention of the Grade II listed Koko nightclub, the Hope and Anchor pub and facades to the adjacent buildings, known as the Bayham Street Property. The Bayham Street Property will be demolished with a new 4 to 5 storey hotel constructed with one level of basement. The basement level will be linked to the existing lower ground floors and basement levels present across the site.
- 1.5. Nearby LUL and Thames Water underground assets have been identified as within the zone of influence of the proposed development.
- 1.6. The BIA has been prepared by RSK Environment Ltd with supporting documents prepared by Heyne Tillett Steel. The authors' qualifications are in accordance the requirements of CPG4.
- 1.7. Information within the BIA is broadly in line with the aspects recommended of a desk study within the GSD Appendix G1. The ground investigation report and interpretative geotechnical report are broadly in line with the aspects recommended in the GSD Appendix G2 and G3.
- 1.8. The BIA states that the site lies upon Made Ground over designated unproductive strata, the London Clay, overlying the Lambeth Group. Groundwater has been detected within the Made Ground and perched at levels within the London Clay.
- 1.9. The BIA states that the existing basements have suffered from historic water ingress, which are believed to relate to perched water within the Made Ground and drainage issues, including sewer flooding. It is accepted that the proposed development will not impact the wider hydrological environment. However, local perched water conditions will need to be mitigated against both during the construction period and in the permanent case. It is noted that Grade 3 waterproofing is proposed.

- 1.10. The BIA states that the site has not been identified as having the potential for flooding. However, Environment Agency data indicates a medium to high surface water flood risk for all the streets surrounding the development site. Further flood risk assessment should be considered and suitable flood risk protection measures proposed in mitigation.
- 1.11. Attenuation SUDS is proposed that would reduce peak offsite discharge flow rates by 50% of those discharging currently, including allowance for a 1 in 100 year storm event and a 20% allowance for climate change. The proposals should be agreed with Thames Water and LBC. It is noted that discussions with Thames Water have commenced.
- 1.12. The new basement will be formed within retaining walls constructed partly by contiguous piles and partly by underpinning existing structures. Indicative pile diameters and outline construction drawings have been presented. Outline retaining wall designs should be presented and an indicative temporary works scheme provided, including drawings that indicate sequencing and propping arrangements. The temporary works scheme should also indicate proposed groundwater control measures and contingency plans to maintain stability during construction. An outline construction programme should be presented.
- 1.13. A suitable ground movement assessment (GMA) and damage impact assessment for buildings within the zone of influence appears to have been presented, based on CIRIA C580. Damage Category 0 (Negligible) is predicted for all buildings. However, inputs to the analysis should be provided, and piled retaining wall toe depths should be confirmed.
- 1.14. Structural monitoring within the zone of influence is proposed, although no details are provided. An outline structural monitoring plan should be provided, indicating that trigger values will be linked to the ground movements and damage impact assessments presented. It is accepted that final detailed monitoring plans will be agreed under the Party Wall Act, and agreements with the other asset owners.
- 1.15. Damage impact to the adjacent highways and pavements, LUL assets and Thames Water assets are all assessed as Negligible. These should be discussed with the relevant authority responsible for each asset and a suitable monitoring plan implemented to limit movements and consequent damage to within the criteria agreed.
- 1.16. Queries and matters requiring further information or clarification are discussed in Section 4 and summarised in Appendix 2. Until the additional information requested has been provided it is not possible to assess whether the requirements of CPG4 have been met.

## 2.0 INTRODUCTION

2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 11 January 2017 to carry out a Category C Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for The Hope Project, London NW1, Camden Reference 2016/6959/P.

2.2. The Audit was carried out in accordance with the Terms of Reference set by LBC. It reviewed the Basement Impact Assessment for potential impact on land stability and local ground and surface water conditions arising from basement development.

2.3. A BIA is required for all planning applications with basements in Camden in general accordance with policies and technical procedures contained within:

- Guidance for Subterranean Development (GSD). Issue 01. November 2010. Ove Arup & Partners.
- Camden Planning Guidance (CPG) 4: Basements and Lightwells.
- Camden Development Policy (DP) 27: Basements and Lightwells.
- Camden Development Policy (DP) 23: Water.

2.4. The BIA should demonstrate that schemes:

- a) maintain the structural stability of the building and neighbouring properties;
- b) avoid adversely affecting drainage and run off or causing other damage to the water environment; and,
- c) avoid cumulative impacts upon structural stability or the water environment in the local area;

and evaluate the impacts of the proposed basement considering the issues of hydrology, hydrogeology and land stability via the process described by the GSD and to make recommendations for the detailed design.

2.5. LBC's Audit Instruction described the planning proposal as: "Redevelopment involving change of use from offices (Class B1) and erection of 5 storey building with basement to provide 32 bedroom hotel (Class C1) following demolition of 65 Bayham Place and 1 Bayham Street (retention of façade) including change of use at 1st and 2nd floor of 74 Crowndale Road from pub (Class A4) to hotel (Class C1), mansard roof extension to 74 Crowndale Road, retention of ground floor of Hope & Anchor PH (Class A4), change of use of flytower to hotel (C1) and

KOKO ancillary recording studio, creation of terraces at 3rd and 4th floor level and erection of 4th floor glazed extension above roof of Koko to provide restaurant and bar to hotel (C1).”

- 2.6. The Audit Instruction confirms that the Koko nightclub is a Grade II listed structure.
- 2.7. CampbellReith accessed LBC’s Planning Portal on 01 February 2017 and gained access to the following relevant documents for audit purposes:
- Basement Impact Assessment (ref 371475-02 (01)) dated 30 November 2016 by RSK Environment Ltd.
  - Structural Methodology Statement and Basement Impact Assessment (ref 1444 rev C) dated December 2016 by Heyne Tillett Steel.
  - Geo-environmental Site Assessment (ref 371475-01 (02)) dated 9 November 2016 by RSK Environment Ltd.
  - Drainage Strategy Report dated October 2016 by Heyne Tillett Steel Ltd.
  - Thames Water Utilities Assessment (ref 371475-03 (00)) dated 24 October 2016 by RSK Environment Ltd.
  - Comments regarding the proposed development from local residents.

### 3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	Yes	
Is data required by Cl.233 of the GSD presented?	Yes	Information within the BIA is broadly in line with the information required of a desk study in line with the GSD Appendix G1. Outline construction programme should be provided.
Does the description of the proposed development include all aspects of temporary and permanent works which might impact upon geology, hydrogeology and hydrology?	Yes	
Are suitable plans/maps included?	Yes	
Do the plans/maps show the whole of the relevant area of study and do they show it in sufficient detail?	Yes	
Land Stability Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	Worked ground risks identified and assessed. LUL and Thames Water have been consulted in regards exclusion zones and requirements of construction close to their assets.
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	No	The hydrology screening does not reference EA data indicating the presence of medium to high risk of surface water flooding adjacent to the site.
Is a conceptual model presented?	Yes	Ground models presented and structural plans provided separately. However, the information is suitable.

Item	Yes/No/NA	Comment
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	N/A	No issues identified at Screening.
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	No	EA data indicates adjacent medium to high surface water flood risk adjacent.
Is factual ground investigation data provided?	Yes	
Is monitoring data presented?	Yes	
Is the ground investigation informed by a desk study?	Yes	
Has a site walkover been undertaken?	Yes	
Is the presence/absence of adjacent or nearby basements confirmed?	Yes	Some levels have been conservatively assumed for the damage impact assessment.
Is a geotechnical interpretation presented?	Yes	
Does the geotechnical interpretation include information on retaining wall design?	No	Indicative parameters provided, no design information. 450mm diameter contiguous piles with 300mm liner wall / underpins with 200mm liner wall stated in text.
Are reports on other investigations required by screening and scoping presented?	Yes	Drainage assessment.
Are baseline conditions described, based on the GSD?	Yes	

Item	Yes/No/NA	Comment
Do the base line conditions consider adjacent or nearby basements?	Yes	
Is an Impact Assessment provided?	Yes	
Are estimates of ground movement and structural impact presented?	Yes	
Is the Impact Assessment appropriate to the matters identified by screen and scoping?	No	No surface water Flood Risk Assessment provided.
Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme?	No	Flood protection measures should be indicated.
Has the need for monitoring during construction been considered?	Yes	Not in sufficient detail. An outline monitoring plan provided.
Have the residual (after mitigation) impacts been clearly identified?	No	Flood risk.
Has the scheme demonstrated that the structural stability of the building and neighbouring properties and infrastructure will be maintained?	No	Retaining wall calculations, temporary works plan, GMA inputs should be provided.
Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment?	Yes	Attenuation SUDS proposals to be agreed with LBC and Thames Water
Has the scheme avoided cumulative impacts upon structural stability or the water environment in the local area?	No	Retaining wall calculations, temporary works plan should be provided.
Does report state that damage to surrounding buildings will be no worse than Burland Category 2?	Yes	
Are non-technical summaries provided?	Yes	

## 4.0 DISCUSSION

- 4.1. The proposed development site is currently occupied by Koko nightclub, the Hope and Anchor pub and adjacent buildings. The proposal involves the retention of the Koko nightclub, the Hope and Anchor pub and facades to the adjacent buildings, known as the Bayham Street Property. The Bayham Street Property will be demolished with a new 4 to 5 storey hotel constructed with one level of basement. The basement level will be linked to the existing lower ground floors and basement levels present across the site. The Koko nightclub building is Grade II listed.
- 4.2. The Northern Line running tunnels and Mornington Crescent station are present within 10m west of the Koko nightclub, with the tunnel crowns approximately 10m below ground level (bgl). A number of Thames Water assets have been identified within the likely zone of influence of the development. Highways, pavements and shallow local utilities are also adjacent to the development and within the zone of influence.
- 4.3. The BIA has been prepared by RSK Environment Ltd with supporting documents prepared by Heyne Tillett Steel. The authors' qualifications are in accordance with the requirements of CPG4.
- 4.4. Information within the BIA is broadly in line with the aspects recommended of a desk study within the GSD Appendix G1. However, flood risk information has been limited to the assessment of flooding from rivers and seas. Surface water flood risk has not been assessed.
- 4.5. The ground investigation report and interpretative geotechnical report are broadly in line with the aspects recommended in the GSD Appendix G2 and G3.
- 4.6. The BIA states that the site lies upon Made Ground, of up to approximately 2m thickness, on to designated unproductive strata, the London Clay, which is present to approximately 25m bgl, overlying the Lambeth Group. Groundwater has been detected during the site investigation and subsequent monitoring data indicates water perched within the Made Ground and at levels within the London Clay.
- 4.7. The BIA states that the existing basements have suffered from historic water ingress, which are believed to relate to perched water within the Made Ground and drainage issues, including sewer flooding. Local perched water conditions will need to be mitigated against both during the construction period and in the permanent case. Dewatering via sump pumping is discussed during construction. Consideration of potential stability issues due to dewatering should be considered and mitigated against, if required. It is noted that Grade 3 waterproofing is proposed for the permanent design. Appropriate mitigation against sewer surcharging should be proposed.

- 4.8. It is accepted that the proposed development will not impact the wider hydrological environment and that the water encountered on site is locally perched and not part of a continuous water body.
- 4.9. The BIA states that the site has not been identified as having the potential for flooding. However, Environment Agency data indicates a medium to high surface water flood risk for all the streets surrounding the development site. Further flood risk assessment should be considered and suitable flood risk protection measures proposed in mitigation, both for the temporary works and for the permanent structure.
- 4.10. Attenuation SUDS is proposed that would reduce peak offsite discharge flow rates by 50% of those discharging currently, including allowance for a 1 in 100 year storm event with a 20% allowance for climate change. An attenuation tank is proposed to be placed in the basement with off-site flows limited by a hydrobrake. The proposals should be agreed with Thames Water and LBC. It is noted that discussions with Thames Water have commenced.
- 4.11. The new basement beneath the Bayham Street Property will be formed within retaining walls constructed partly by contiguous piles and partly by underpinning existing structures, with a formation level approximately 3.2m bgl. The Hope and Anchor basement will be lowered by approximately 1.2m by underpinning the existing basement walls.
- 4.12. Indicative pile diameters, 450mm, have been provided for the proposed basement retaining walls and outline construction drawings have been presented. Outline retaining wall designs should be presented and an indicative temporary works scheme provided, including drawings that indicate sequencing and propping arrangements. The temporary works scheme should also indicate proposed groundwater control measures and contingency plans to maintain stability during construction. An outline construction programme should be provided.
- 4.13. A suitable ground movement assessment (GMA) and damage impact assessment for buildings within the zone of influence appears to have been presented, based on CIRIA C580 guidance. Differential depths between the proposed development's foundations and nearby structures have been identified, and where unknown these have been conservatively assessed (for ground movement purposes) as being shallow foundations, just below the existing ground level.
- 4.14. The GMA has considered vertical movements due to the demolition / unloading of the underlying ground and construction / loading of the underlying ground using PDisp, and has considered the movements caused by installation of the retaining walls and basement excavation using XDisp. Damage Category 0 (Negligible) is predicted for all buildings. However, inputs to the PDisp and XDisp analysis should be provided, and piled retaining wall toe depths should be confirmed.

- 4.15. Structural monitoring within the zone of influence is proposed, although no details are provided. An outline structural monitoring plan should be presented, indicating that trigger values will be linked to the ground movements and damage impact assessments presented. It is accepted that final detailed monitoring plans with adjacent properties will be agreed under the Party Wall Act.
- 4.16. Damage impact to the adjacent highways and pavements is assessed as Negligible. However, this should be discussed with the relevant authority responsible (Transport for London, The Highways Agency or LBC) and a suitable monitoring plan implemented to limit movements and consequent damage to within the criteria agreed.
- 4.17. Damage impact to the adjacent LUL assets are also assessed as Negligible. This should be discussed with LUL and a suitable monitoring plan implemented to limit movements and consequent damage to within the criteria agreed. It is noted that discussions with LUL have commenced.
- 4.18. Damage impacts to a number of Thames Water assets are considered, which concludes that damage is unlikely to be caused to the assets by the proposed development activities. The assessment should be presented to Thames Water and additional analysis or mitigation measures, in conjunction with a suitable monitoring plan, should be agreed with them as required.

## 5.0 CONCLUSIONS

- 5.1. The proposed development site is currently occupied by Koko nightclub, the Hope and Anchor pub and adjacent buildings. The Bayham Street Property will be demolished with a new 4 to 5 storey hotel constructed with one level of basement. Nearby buildings and underground structures have been identified and the development's impact upon them has been assessed.
- 5.2. The BIA authors' qualifications are in accordance with the requirements of CPG4.
- 5.3. Information within the BIA is broadly in line with the aspects recommended of a desk study within the GSD Appendix G1.
- 5.4. The ground investigation report and interpretative geotechnical report are broadly in line with the aspects recommended in the GSD Appendix G2 and G3. The identified ground conditions are Made Ground overlying London Clay and the Lambeth Group.
- 5.5. It is accepted that the proposed development will not impact the wider hydrological environment. However, the existing basements have suffered water ingress and local perched water conditions will need to be mitigated against both during the construction period and in the permanent case.
- 5.6. Environment Agency data indicates a medium to high surface water flood risk for all the streets surrounding the development site. Further flood risk assessment should be considered and suitable flood risk protection measure proposed in mitigation.
- 5.7. Attenuation SUDS is proposed. The proposals should be agreed with Thames Water and LBC. It is noted that discussions with Thames Water have commenced. It is accepted that the proposed development will not impact upon the wider hydrological environment.
- 5.8. The new basement retaining walls will be constructed partly by contiguous piles and partly by underpinning existing structures. Outline retaining wall designs and an indicative temporary works scheme should be presented. An outline construction programme should be presented.
- 5.9. A suitable ground movement assessment (GMA) and damage impact assessment for buildings within the zone of influence appears to have been presented. Inputs to the PDisp and XDisp analysis should be provided, and piled retaining wall toe depths should be confirmed. An outline structural monitoring plan should be provided, indicating that trigger values will be linked to the ground movements and damage impact assessments presented.
- 5.10. Damage impact to the adjacent highways and pavements, LUL assets and Thames Water assets are all assessed as Negligible. These should be discussed with the relevant authority responsible

for each asset and a suitable monitoring plan implemented to limit movements and consequent damage to within the criteria agreed.

- 5.11. Queries and matters requiring further information or clarification are summarised in Appendix 2. Until the additional information requested has been provided it is not possible to assess whether the requirements of CPG4 have been met.

## Appendix 1: Residents' Consultation Comments

Residents' Consultation Comments

Surname	Address	Date	Issue raised	Response
Summer Butterfly Investments Ltd	48 – 56 Bayham Place	6 January 2017	Fully supportive of the planned redevelopment.	N/A
Thames Water	Development Planning Dept	20 January 2017	Surface water drainage proposals should seek approval of Thames Water and should allow for appropriate attenuation.	4.10

## Appendix 2: Audit Query Tracker

Audit Query Tracker

Query No	Subject	Query	Status/Response	Date closed out
1	Land Stability	Retaining wall designs, temporary works plan, construction programme	Open – to be provided as 4.12, 4.7.	
2	Land Stability	Ground movement assessment and damage impact assessment	Open – to be provided as 4.13, 4.14.	
3	Land Stability	Structural monitoring	Open – to be provided as 4.15.	
4	Land Stability	Asset monitoring	Open – to be agreed with asset owners, suitable to monitor and control works to within agreed criteria, as 4.16, 4.17, 4.18.	N/A - Ongoing
5	Flood Risk	Surface water flood risk	Open – suitable assessment and mitigation to be proposed as 4.4, 4.9.	
6	Flood Risk	Perched water, sewer surcharging	Open – suitable assessment and mitigation to be proposed as 4.6, 4.7.	
7	Hydrology	Attenuation SUDS	Open – proposals to be agreed with Thames Water and LBC as 4.10.	N/A - Ongoing

## Appendix 3: Supplementary Supporting Documents

None

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